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able from the large mass of unpublished facts regarding the region traversed, but from the historical *résumé* of explorations made in the Great Basin from 1776 until 1869, given by Colonel Simpson, and from the abstracts and quotations from Father Escalanti's MS. journal, now said to be treasured up in the city of Mexico, and of which a copy was contained in the library of Col. Peter Force, of Washington. Besides the itinerary by Colonel Simpson, and several appendices giving the astronomical, meteorological, and geographical results of the expedition, there are valuable reports on the geology, palæontology, natural history, and ethnology chiefly of Utah, including elaborate treatises on the ichthyology by Professor Gill, and on the botany of the route by Dr. Engelmann, both of which are accompanied by numerous plates.

RECENT CHANGES OF LEVEL OF THE GREAT SALT LAKE. — The party which started about seven days ago under Captain D. L. Davis to explore the western shore of the Great Salt Lake returned last evening after a successful trip. Starting from near Farmington, the party touched at Church Island and then sailed direct to Strong's Point, where the old triangular monument, erected by Stansbury, was found intact. The lake was found to have risen so that many miles marked as lake shore on the maps is now from six to ten feet under water. The Water Witch sailed "inland" for about twelve miles, when the occupants waded ashore and took observations, but it was found that there is a general elevation of the land, which, though slight, precludes the possible lowering of the lake in this direction. The party then beat along the shores northward as far as Kelton, landing frequently to make observations and take angles. It was found, however, that the shifting of the lake westward was an impossibility. Touching at Fremont Island, the company returned with the problem answered, but not satisfactorily. — *Salt Lake Times*, September 14, 1876.

MICROSCOPY.¹

CLEANING DIATOMS WITH GLYCERINE. — Mr. James Neil, of Cleveland, uses glycerine as an easy and efficacious means of separating diatom shells from the foreign matter with which they are naturally mixed. He fills a two-ounce graduated measuring glass three quarters full of glycerine and water mixed in equal parts. The diatoms after being treated with acid and thoroughly washed, are then shaken up in some pure water and poured gently over the diluted glycerine. If carefully done the water and diatoms do not at first sink into the glycerine, but gradually the diatoms sink through the water, and into the glycerine, preceding the light flocculent matter held in the water. After a few minutes, a pipe introduced closed through the water and into the glycerine will bring up remarkably clean diatoms, which are to be afterward freed from glycerine by repeated washing and decanting. Coloring the water in which the diatoms are held is thought to aid in watching

¹ Conducted by DR. R. H. WARD, Troy, N. Y.

the progress of the operation. This method has been tried thus far on Richmond earth, in which the diatoms are heavier than the adherent matter, but it is believed to be generally applicable.

CUPRO SCHEELITE.—This new mineral which occurs in different parts of California, and which resembles scheelite in which a part of the lime is replaced by oxide of copper, was first described and named by Professor Whitney. Mr. Hawks, in describing it to the San Francisco Microscopical Society, stated that when first discovered it was thought to be a mechanical mixture of scheelite with some copper mineral, but that a careful examination under the microscope showed it to be perfectly homogeneous. The decision of the microscope was subsequently confirmed by the discovery of crystals of the mineral, which proved it to be a distinct and new species.

SCIENTIFIC NEWS.

—On the 28th of December, 1876, died at the Smithsonian Institution, in the fifty-ninth year of his age, F. B. Meek, long connected with the Institution as a volunteer assistant in the department of palæontology.

Mr. Meek was of Irish extraction, his parents having settled in Indiana some sixty years ago, and shortly after his birth removed to Kentucky, where young Meek received a common school education, and was known when quite young for his ability as a writer, his retiring disposition, and for exhibiting a marked interest in geology and kindred branches of science. On arriving at his majority he entered into commercial pursuits in which he was not successful, and afterward for a time earned his daily bread as a painter of portraits and such other subjects as the necessities of his surroundings offered to him. He was also connected for a time with some local museum of curiosities of the old-fashioned kind. At a later date his geological predilections were favored by a connection with some of the earlier geological surveys in the West, while his scientific career may be said to have fairly been opened by his employment as a draughtsman and assistant on the survey of the State of New York. The discovery which first brought him into prominence was his identification, independently, of Peruvian rocks in America, a fact which was discovered nearly simultaneously by several better-known geologists. His undivided attention to palæontology and his almost unrivaled abilities in delineating the fossils which he studied, joined to great caution and what appeared to be an intuitive capacity for recognizing the relations of the remains he described, soon placed him in the front rank of American palæontologists. The progress of geological discovery in the West, which has culminated at the present day in the great surveys of Hayden, Powell, and Wheeler, under government auspices, is in large part due to the abilities of Mr. Meek, for without